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## ERRATA.

VOL. LXXXII (ABSTR., 1902).

## Part I

Page Line  
174 22 and throughout the abstract, for "tropic" read "tropicin."

## PART II (INDEX)

Page Line  
743 7<sup>th</sup> col. i. } for "tropic acids," read "tropinic acids."  
1032 27 .. i. }

VOL. XCIV (ABSTR., 1908).

Page Line  
ii. 395 22\* for "C<sub>15</sub>H<sub>20</sub>O<sub>6</sub>Ag" read "C<sub>15</sub>H<sub>20</sub>O<sub>6</sub>Ag<sub>2</sub>."

VOL. C (ABSTRA., 1911).

Page Line  
ii. 406 18 for "durites" read "dunites."  
ii. 1105 7\* "1910, A. ii, 57" read "1910, A. ii, 46."

VOL. CII (ABSTR., 1912).

Page Line for "idiocrase" read "idocrase."  
ii. 57 19 " " "rhodocrosite" read "rhodochrosite."  
ii. 173 2 " " "sopal" read "opal"?

VOL. CIV (ABSTR., 1913)

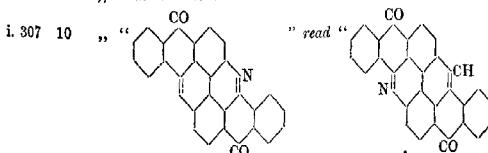
Page	Line	VOL. CIV (ASIANA, 1955).
ii. 419	14	for "Rev. . . ." read "Riv. Min. Crist. Ital."
ii. 419	20*	" " <i>samsyeite</i> " read " <i>semseyite</i> ."
ii. 423	3	" " <i>hornblende</i> " read " <i>hornfels</i> ."
ii. 423	7	" " double refraction (mean value 1.67)" read "mean index of refraction 1.67."

VOL. CXII (ABSTR., 1917).

Page	Line	
i. 660	22*	for "Bixins" read "Bixin. IV."
i. 660	21,*	"425" read "495."
i. 683	7*	"89" read "89."
ii. 112	7	"nitrate" read "nitrite."
ii. 457	2	"Genossen" read "collaborators."
ii. 496	18*	"hedenbergt" read "hedenbergeite."

VOL. CXIV. (ABSTR., 1918).

Page Line for "FRIDRICIA" read "FRIDERICIA."  
i. 275 15 i. 282 25 "GALBRANSEN" read "GULBRANSEN."



\* From bottom.

ERRATA (continued).

Page	Line	
i. 342	15*	for "p-Aminophenol" read "Nitrobenzene."
i. 343	25	"benzoyl" read "b-nyl."
ii. 17	9	"Wengel" read "Wenzel."
ii. 21	6*	Insert "[Compare, however, Fenton, Trans., 1894, 65, 899.]"
ii. 63	15*	for "flame" read "plane."
ii. 69	4	after "2:4-dinitrotoluene" insert "the system."
ii. 69	4*	for "molecules" read "molecules."
ii. 95	8	"ZACHA" read "LACHA."
ii. 102	{15*} {14*}	delete "[See Ind., 71A.]"
ii. 120	4*	for "2CaO, VO <sub>3</sub> , 3CO <sub>2</sub> , 10H <sub>2</sub> O" read "2CaO, VO <sub>2</sub> , 4CO <sub>2</sub> , 10H <sub>2</sub> O."
ii. 323	{10 15}	"Sulpharsenata" read "Sulpharsenite."
ii. 326	12*	"5%" read "25%."
ii. 372	23	"Vasca" read "Vaca."
ii. 470	10	col. ii. for "i, 279" read "ii, 279."

COLLECTIVE INDEX, 1893—1902 (AUTHORS)

Page	Col.	Line	
218	i	18*	for "tropic acids," read "tropinic acids."
1641	ii	3 & 4	delete.
1642	i	23*	insert "Tropicin Acids (GADAMER) 1902, A., i, 174."

COLLECTIVE INDEX, 1903—1912 (AUTHORS).

Page	Col.	Line	
888	i	22	for "Butea fundosa" read "Butea frondosa."
1012	i	9*	for "1904, A., i, 24" read "1904, A., ii, 39."

SUBJECTS.

Page	Col.	Line	
278	i	20	for "A., ii, 868" read "A., i, 868."
1317	ii	23* and 24*	should be deleted.
1326	ii	30*	below this line insert "3-Methoxy-4-toluic acid, methyl ester" (GUILLAUMIN), 1910, A., i, 375.

NOTE TO T., 1917, 111, 664—665.

The word "pure" in this section is intended to convey that the zinc sulphide in question was free from any intentional impurities, and that, so far as could be provided, it was also free from quantities of impurity detectable by ordinary chemical methods. It was not intended to suggest that the sulphide was spectroscopically pure. The methods of preparation described in the section obviously cannot provide against the contamination of the product with traces of zinc oxide.

\* From bottom.

# INSTRUCTIONS TO ABSTRACTORS,

GIVING THE

## NOMENCLATURE AND SYSTEM OF NOTATION ADOPTED IN THE ABSTRACTS.

THE object of the abstracts of chemical papers published elsewhere than in the Transactions of the Society is to furnish the Fellows with a concise account of the progress of chemical science from month to month. It must be understood that as the abstracts are prepared for the information of the Fellows in general, they cannot possibly be made so full or so detailed as to obviate on the part of those who are engaged on special investigations the necessity of consulting the original memoirs.

1. Titles of papers must be given literally.
2. Before beginning to write the abstract, the whole of the original paper must be read, in order that a judgment may be formed of its importance and of the scale on which the abstract should be made.
3. In the case of papers dealing with subjects not strictly chemical, the abstract should refer only to matters of chemical interest in the original.
4. The abstract should consist mainly of the expression, in the abstractor's own words, of the substance of the paper.
5. The abstract should be made as short as is consistent with a clear and accurate statement of the author's results.
6. A concise statement showing the general trend of the investigation should be given at the commencement of those abstracts where the nature of the original permits of it.
7. If an abstract of a paper on the same subject, either by the author of the paper abstracted, or by some other author, has already appeared, note should, as a rule, be made of this fact.
8. Matter which has appeared once in the *Abstracts* is not to be abstracted again, a reference being given to the volume in which the abstract may be found.
9. As a rule, details of methods of preparation or analysis, or generally speaking of work, are to be omitted, unless such details are essential to the understanding of the results, or have some independent value. Further, comparatively unimportant compounds, such as the inorganic salts of organic bases or acids, should be mentioned quite shortly. On the other hand, data such as melting and boiling points, sp. gr., specific rotation, &c., must be given in every case unless recorded in earlier papers.

## Nomenclature.

10. Employ names such as *sodium chloride, potassium sulphate* for inorganic compounds, and use the terminals *ous* and *ic* only in distinguishing compounds of different orders derived from the same elementary radicle; such, for instance, as mercurous and mercuric chlorides, sulphurous and sulphuric acids.

11. Term compounds of metallic radicles with the OH-group *hydroxides* and not hydrates, the name hydrate being reserved for compounds supposed to contain water of combination or crystallisation.

12. Term salts containing an amount of metal equivalent to the displaceable hydrogen of the acid, *normal* and not neutral salts, and assign names such as sodium hydrogen sulphate, disodium hydrogen phosphate, &c., to the acid salts. Basic salts as a rule are best designated merely by their *formulae*.

13. Names in common use for oxides should be employed, for example: NO, nitric oxide; CO<sub>2</sub>, carbon dioxide; P<sub>4</sub>O<sub>10</sub>, phosphoric oxide; As<sub>2</sub>O<sub>6</sub>, arsenious oxide; Fe<sub>2</sub>O<sub>3</sub>, ferric oxide.

14. In open chain compounds, Greek letters must be used to indicate the position of a substituent, the letter *α* being assigned to the first carbon atom in the formula, except in the case of CN and CO<sub>2</sub>H, for example, CH<sub>3</sub>·CH<sub>2</sub>·CH<sub>2</sub>·CH<sub>2</sub>I *α*-iodobutane, CH<sub>3</sub>·CH<sub>2</sub>·CH<sub>2</sub>CN *α*-cyanopropane.

15. Isomeric open chain compounds are most conveniently represented as substitution derivatives of the longest carbon chain in the formula; for example,

$$\begin{array}{c} \text{CH}_3 > \text{CH} \cdot \text{CH} < \text{CH}_3 \\ \text{CH}_3 \cdot \text{CH}_2 & \text{or} & \text{CH}_3 \cdot \text{CH}_2 \cdot \text{CHMe} \cdot \text{CHMe} \cdot \text{CH}_3 \\ \text{should be termed } \beta\gamma\text{-dimethylpentane not methylethylisopropyl-} \\ \text{methane, and } \begin{array}{c} \text{CH}_3 > \text{CH} \cdot \text{CH} < \text{CH}_3 \\ \text{CH}_3 & & \text{CO}_2\text{H} \end{array} \text{ or } \text{CH}_3 \cdot \text{CHMe} \cdot \text{CHMe} \cdot \text{CO}_2\text{H} \\ \text{should be termed } \alpha\beta\text{-dimethylbutyric acid, not } \alpha\beta\beta\text{-trimethylpropionic,} \\ \text{or } \alpha\text{-methylisovaleric, or methylisopropylacetic acid.} \end{array}$$

16. Use names such as methane, ethane, &c., for the normal paraffins or hydrocarbons of the C<sub>n</sub>H<sub>2n+2</sub> series of the form CH<sub>3</sub>·[CH<sub>2</sub>]<sub>n</sub>·CH<sub>3</sub>, &c. Term the hydrocarbons C<sub>2</sub>H<sub>4</sub> and C<sub>2</sub>H<sub>2</sub> ethylene and acetylene respectively (not ethene and ethine). Homologues of the ethylene series are to be indicated by the suffix *-ene*, and those of the acetylene series, wherever possible, by *-inene*. Adopt the name allene for the hydrocarbon CH<sub>2</sub>·C·CH<sub>2</sub>.

17. Distinguish all hydroxyl derivatives of hydrocarbons by names ending in *ol*. Alcohols should be spoken of as mono-, di-, tri-, or n-hydric, according to the number of OH-groups. Compounds which are not alcohols, but for which names ending in *ol* have been used, are to be represented by names ending in *ole*, if a systematic name cannot be given, thus anisole not anisol, indole not indol. Compounds such as MeONa, EtONa, &c., should be termed sodium methoxide, sodium ethoxide, &c.

18. The radicles indicated in the name of a compound are to be

given in the order fluoro-, chloro-, bromo-, iodo-, nitro-, nitroso-, amino, imino, cyano, thiocyanato, hydroxy, keto.

19. Compounds analogous to the acids of the lactic series containing the OH-group should be termed *hydroxy*-derivatives, and not oxy-derivatives; for example, hydroxyacetic and not oxyacetic acid. Compounds containing the analogous groups OEt, OPh, OAc, &c., should in like manner be termed ethoxy-, phenoxy-, acetoxy- derivatives. Thus  $\alpha$ -ethoxypropionic acid, OEt-CHMe-CO<sub>2</sub>H, instead of ethyl-lactic acid; 3:4-diethoxybenzoic acid, (OEt)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>CO<sub>2</sub>H, instead of diethylprotocatechic acid; and  $\alpha$ -acetoxypropionic acid, OAc-CHMe-CO<sub>2</sub>H, instead of acetyl-lactic acid. Terms such as diethylprotocatechic acid should be understood to mean compound formed by the displacement of hydrogen atoms in the hydrocarbon radicle of protocatechic acid by ethyl, thus, C<sub>6</sub>HET<sub>2</sub>(OH)<sub>2</sub>·CO<sub>2</sub>H, and not C<sub>6</sub>H<sub>3</sub>(OEt)<sub>2</sub>·CO<sub>2</sub>H, just as dibromoprotocatechic acid is understood to be the name of a compound of the formula C<sub>6</sub>HBr<sub>2</sub>(OH)<sub>2</sub>·CO<sub>2</sub>H.

20. The term *ether* should be restricted to the oxides of hydrocarbon radicles and their derivatives, and the esters (so-called compound ethers or ethereal salts) should be represented by names similar to those given to metallic salts.

21. When a substituent is one of the groups NH<sub>2</sub>, NHR, NR<sub>2</sub>, NH or NR, its name should end in *ine*; for example,  $\beta$ -aminopropionic acid, NH<sub>2</sub>CH<sub>2</sub>·CH<sub>2</sub>·CO<sub>2</sub>H,  $\beta$ -anilino-acrylic acid, NHPh·CH<sub>2</sub>·CH<sub>2</sub>·CO<sub>2</sub>H,  $\alpha$ -iminopropionic acid, NH·CMe-CO<sub>2</sub>H.

22. Compounds of the radicle SO<sub>3</sub>H should, whenever possible, be termed sulphonic acids, or failing this, sulpho-compounds; for example, benzenesulphonic acid, sulphobenzoic acid.

23. Basic substances should invariably be indicated by names ending in *ine*, as aniline instead of anilin, the termination *in* being restricted to certain neutral compounds, viz., glycerides, glucosides, bitter principles, and proteins, such as palmitin, amygdalin, albumin. The compounds of basic substances with hydrogen chloride, bromide or iodide should always receive names ending in *ide* and not *ate*, as morphine hydrochloride and not morphine hydrochlorate.

24. The Collective Index, 4th decade (1903-1912) should be adopted as the standard of reference on questions of nomenclature not provided for in the preceding sections.

#### Notation.

25. In empirical formulae the elements are to be given in the order C, H, O, N, Cl, Br, I, F, S, P, and the remainder alphabetically.

26. Equations should be omitted unless essential to the understanding of the results; as a rule, they should not be written on a separate line, but should "run on" with the text.

27. To economise space, it is desirable:

- (a) That *dots* should be used instead of *ashes* in connecting contiguous symbols or radicles, whenever this does not interfere with the clearness of the formula.

(b) That formulae should be shortened by the judicious employment of the symbols Me for  $\text{CH}_3$ , Et for  $\text{C}_2\text{H}_5$ , Pr<sup>a</sup> for  $\text{CH}_2\text{-CH}_2\text{-CH}_3$ , Pr<sup>b</sup> for  $\text{CH}(\text{CH}_3)_2$ , Ph for  $\text{C}_6\text{H}_5$ , Py for  $\text{C}_5\text{H}_4\text{N}$ , Ac for  $\text{CO-CH}_3$ , and Bz for  $\text{CO-C}_6\text{H}_5$ .

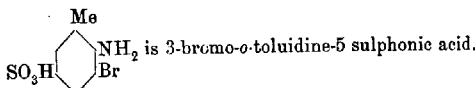
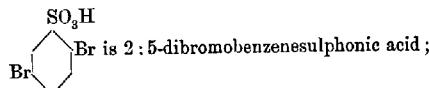
(c) That formulae should be written *in one line* whenever this can be done without obscuring their meaning.

28. In representing the constitution of benzene derivatives, the relative positions of the radicles in the symbol of benzene should be indicated by numerals, instead of by means of the hexagon formula.

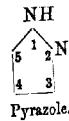
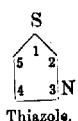
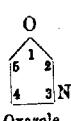
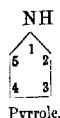
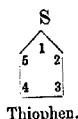
(a) The abbreviations *o*, *m*, and *p*, should be used in place of 1:2- or *ortho*, 1:3- or *meta*-, and 1:4- or *para*.

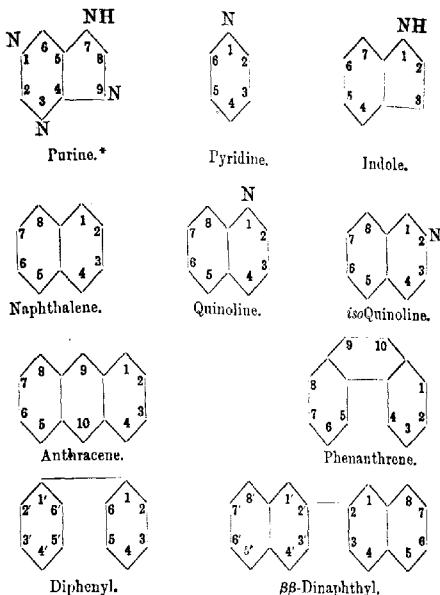
(b) In numbering positions in the case of substitution derivatives of phenol, aniline, benzonitrile, benzoic acid, benzenesulphonic acid, benzaldehyde, and toluene, the characteristic radicle of each of these parent substances is to be regarded as in position 1 (compare Collective Index).

(c) Names of substitution derivatives should be given in such a way that the position of the substituent is indicated by a numeral prefixed; for example:—



29. In representing the constitution of derivatives of other "closed chain" hydrocarbons, graphic formulae should not be employed, but the system of numbering positions indicated in Richter's *Lexikon der Kohlenstoff-Verbindungen* (3rd edition, 1910, pp. 14—26) should be used, of which the following schemes may be regarded as typical:—





#### Manuscript.

30. In view of the difficulty of dealing with MSS. of widely varying sizes, abstracts cannot be accepted unless written on quarto paper ( $10 \times 8$  in.).
31. Not more than one abstract must appear on a sheet.
32. When an abstract exceeds a sheet in length, the sheets must be fastened together by means of gum at the top left-hand corner.
33. The name of the abstractor must be written diagonally at the top left-hand corner of the first sheet of the abstract.

#### Proofs.

34. Abstractors are expected to read and correct proofs carefully, and to check all formulae and figures against MSS.
35. All proofs, however small, must be returned to the Sub-Editor not later than 24 hours after receipt from the printers.

\* \* The Editor's decision, in all matters connected with the Abstracts, must be considered final.

\* This numbering, proposed originally by E. Fischer, is adopted in the text of the *Lexikon*.







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### ABBREVIATED TITLE.

### JOURNAL.

<i>Abh. Böh. Akad.</i>	Abhandlungen der Böhmischen Akademie.
<i>Abh. Deut. Naturwiss. Med.</i>	Abhandlungen der Deutschen Naturwissenschaftlichen und Medizinischen Verein, Böhmen.
<i>Acad. Sci. Fennicae</i>	Acta Societatis Scientiarum Fennicae.
<i>Agric. Bull. F. M. S.</i>	Agricultural Bulletin of the Federated Malay States.
<i>Agric. Exp. Stat. Univ. Wisconsin Res. Bull.</i>	Agricultural Experimental Station, University of Wisconsin, Research Bulletin.
<i>Agric. Gaz. S. Russia</i>	Agricultural Gazette of Southern Russia.
<i>Agric. J. India</i>	Agricultural Journal of India.
<i>Agric. Ledger</i>	Agricultural Ledger.
<i>Agric. Res. Inst., Pusa Rep. (Bull.)</i>	Agricultural Research Institute, Pusa, Report and Bulletins.
<i>Agric. and Sylvic.</i>	Agriculture and Sylviculture (Petrograd).
<i>Algem. Brau-Hopf. Zeit.</i>	Allgemeine Brau- und Hopfen-Zeitung.
<i>Algem. Gerber-Zeit.</i>	Allgemeine Gerber-Zeitung.
<i>Algem. Z. Bierbrau. u. Malzfabr.</i>	Allgemeine Zeitschrift für Bierbrauerei und Malzfabrikation.
<i>Amat. Fotog.</i>	Amator Fotografen.
<i>Amer. Brewers' J.</i>	American Brewers' Journal.
<i>Amer. Brewers' Rev.</i>	American Brewers' Review.
<i>Amer. J. Bot.</i>	American Journal of Botany.
<i>Amer. J. Dis. Children</i>	American Journal of Diseases of Children.
<i>Amer. J. Pharm.</i>	American Journal of Pharmacy.
<i>Amer. J. Physiol.</i>	American Journal of Physiology.
<i>Amer. J. Publ. Health</i>	American Journal of Public Health.
<i>*Amer. J. Sci.</i>	American Journal of Science.
<i>Amer. Mach.</i>	American Machinist.
<i>Amer. Min.</i>	American Mineralogist.
<i>Amer. Perf.</i>	American Perfumer.
<i>Amer. Phot.</i>	American Photography.
<i>Anal. Fis. Quim.</i>	Analés de la Sociedad Española Física y Química.
<i>Anal. Soc. Quím. Argentina</i>	Analés de la Sociedad Química Argentina.
<i>Analyst</i>	Analyst.
<i>Annalen</i>	Justus Liebig's Annalen der Chemie.
<i>Ann. Bot.</i>	Annals of Botany.
<i>Ann. di Bot.</i>	Annali di Botanica.
<i>Ann. Chim.</i>	Annals de Chimie.
<i>Ann. Chim. Analyt.</i>	Annals de Chimie Analytique.
<i>Annali Chim. Appl.</i>	Annali di Chimica Applicata.
<i>Ann. Ecole Agric. Mont- pellier</i>	Annales de l'Ecole nationale d'Agriculture de Montpellier.
<i>Ann. Falsif.</i>	Annales des Falsifications.
<i>Ann. Geol. Min. Russie</i>	Annuaire de la Géologie et de la Minéralogie de Russie.
<i>Ann. hyg. publ. med. legale</i>	Annales d'hygiène publique et de médecine légale.
<i>Ann. Inst. Mines, Petrograd</i>	Annales de l'Institut des Mines, Petrograd.
<i>Ann. Inst. Pasteur</i>	Annales de l'Institut Pasteur.
<i>Ann. Inst. Polyt., Petro- grad</i>	Annales de l'Institut Polytechnique, Petrograd.
<i>Ann. Physik</i>	Annalen der Physik.
<i>Ann. Physique</i>	Annales des Physique.
<i>Ann. R. Staz. Chim. Agrar. Sperim.</i>	Annali della R. Stazione Chimico Agraria Sperimentale di Roma.
<i>Ann. sci. Univ. Jassy</i>	Annales scientifiques de l'Université de Jassy.

ABBREVIATED TITLE.	JOURNAL.
<i>Ann. Soc. Geol. Belg. : Publ. rel. au Congo Belge</i>	<i>Annales de la Société géologique de Belgique : Publications relatives au Congo Belge.</i>
<i>Apoth. Zeit.</i>	<i>Apotheker-Zeitung.</i>
<i>App. Sci.</i>	<i>Applied Science.</i>
<i>Arb. Gebiet. Physik, Math. Chem.</i>	<i>Arbeiten aus dem Gebiete der Physik, Mathematik und Chemie.</i>
<i>Arb. Gesundh. Amt.</i>	<i>Arbeiten aus dem Gesundheitsamte.</i>
<i>Arch. Anat. Physiol.</i>	<i>Archiv für Anatomie und Physiologie.</i>
<i>Arch. Chem. Mikros.</i>	<i>Archiv Chemie und Mikroskopie.</i>
<i>Arch. Entw.-mech. Org.</i>	<i>Archiv für Entwicklungsmechanik der Organismen.</i>
<i>Arch. exptl. Path. Pharm.</i>	<i>Archiv für experimentelle Pathologie und Pharmakologie.</i>
<i>Arch. farm. sper. sci. aff.</i>	<i>Archivio di farmacologia sperimentale e scienze affini.</i>
<i>Arch. Fisiol.</i>	<i>Archivio di Fisiologia.</i>
<i>Arch. Hyg.</i>	<i>Archiv für Hygiene.</i>
<i>Arch. Int. Med.</i>	<i>The Archivs of Internal Medicine.</i>
<i>Arch. Ital. Biol.</i>	<i>Archives italiennes de Biologie.</i>
<i>Arch. Med. Pharm. milit.</i>	<i>Archives de Médecine et de Pharmacie militaires.</i>
<i>Arch. Néerland.</i>	<i>Archives Néerlandaises de sciences exactes et naturelles.</i>
<i>Arch. Néerland. physiol.</i>	<i>Archives Néerlandaises de physiologie de l'homme et des animaux.</i>
<i>*Arch. Pharm.</i>	<i>Archiv der Pharmazie.</i>
<i>Arch. physikal. Chem. Glas. Keram.</i>	<i>Archiv für die physikalische Chemie der Glases und der Keramischen Massen.</i>
<i>Arch. Sci. biol. Petrograd.</i>	<i>Archives des Sciences biologiques, Petrograd.</i>
<i>Arch. Sci. phys. nat.</i>	<i>Archives des Sciences physiques et naturelles.</i>
<i>Arch. Suikerind. Ned. Indië.</i>	<i>Archief voor de Suikerindustrie in Nederlandsch Indië.</i>
<i>Arkiv. Kem. Min. Geol.</i>	<i>Arkiv. for Kemi, Mineralogi och Geologi.</i>
<i>Arm. Beton.</i>	<i>Armierteter Beton.</i>
<i>*Atti R. Accad. Lincei</i>	<i>Atti della Reale Accademia dei Lincei.</i>
<i>Atti R. Accad. Sci. Torino</i>	<i>Atti della Reale Accademia delle Scienze di Torino.</i>
<i>Atti R. Ist. Veneto Sci.</i>	<i>Atti del Istituto Veneto di Scienze, Ettore ed Arti.</i>
<i>Aust. Pharm. Notes.</i>	<i>Australian Pharmaceutical Notes and News.</i>
<i>Beitr. Min. Japan</i>	<i>Beiträge zur Mineralogie von Japan.</i>
<i>Berg. Hüttenm. Rundsch.</i>	<i>Berg- und Hüttenmannisches Rundschau.</i>
<i>*Ber.</i>	<i>Berichte der Deutschen chemischen Gesellschaft.</i>
<i>Ber. Deut. bot. Ges.</i>	<i>Berichte der Deutschen botanischen Gesellschaft.</i>
<i>Ber. Deuts. pharm. Ges.</i>	<i>Berichte der Deutschen pharmazeutischen Gesellschaft.</i>
<i>Ber. Deut. physikal. Ges.</i>	<i>Berichte der Deutschen physikalischen Gesellschaft.</i>
<i>Ber. K. Sächs. Ges. Wiss.</i>	<i>Berichte über die Verhandlungen der Königlich Sächsischen Gesellschaft der Wissenschaften.</i>
<i>Ber. Oberhess. Ges. Natur- Heilkunde.</i>	<i>Berichte der Oberhessischen Gesellschaft für Natur- und Heilkunde zu Giessen.</i>
<i>Ber. Ohara Inst. landw. Forsch.</i>	<i>Berichte des Ohara Instituts für landwirtschaftliche Forschungen.</i>
<i>Berlin. Klin. Woch.</i>	<i>Berliner Klinische Wochenschrift.</i>
<i>*Bied. Zentr.</i>	<i>Biedermann's Zentralblatt für Agrikulturchemie und rationellen Landwirtschafts-Betrieb.</i>
<i>Biochem. Bull.</i>	<i>Biochemical Bulletin.</i>
<i>*Biochem. J.</i>	<i>Biochemical Journal.</i>
<i>*Biochem. Zeitsch.</i>	<i>Biochemische Zeitschrift.</i>
<i>Blätter Zucker.</i>	<i>Blätter für Zuckerrübenbau.</i>
<i>Bd. of Trade J.</i>	<i>Board of Trade Journal.</i>
<i>Bol. Acad. Nac. Ciencias, Cordoba</i>	<i>Boletín de la Academia Nacional des Ciencias, Cordoba.</i>
<i>Boll. Chim. farm.</i>	<i>Bollettino Chimico farmaceutico.</i>
<i>Boll. Soc. Geol. Ital.</i>	<i>Bollettino della Società Geologica Italiana.</i>

JOURNALS FROM WHICH ABSTRACTS ARE MADE.

ABBREVIATED TITLE.	JOURNAL.
<i>Boll. Soc. Med.-Chirurg.</i>	Bollettino della Società Medico-Chirurgica, Pavia.
<i>Bol. Centr.</i>	Botanisches Centralblatt.
<i>Bol. Gaz.</i>	Botanical Gazette.
<i>Brass. Malt.</i>	Brasserie et Malterie.
<i>Brau. u. Malzind.</i>	Bran- u. Malzindustrie.
<i>Braunkohle</i>	Braunkohle.
<i>Brewers' J.</i>	Brewers' Journal.
<i>Brit. and Col. Pharm.</i>	British and Colonial Pharmacist.
<i>Brit. J. Phot.</i>	British Journal of Photography.
<i>Brit. Med. J.</i>	British Medical Journal.
<i>Buletinul Chim.</i>	Buletinul Chimie.
<i>Bull. Soc. Romane Stiin.</i>	Buletinul Societății Române de Științe.
<i>Bull. Acad. roy. Belg.</i>	Academie royale de Belgique—Bulletin de la Classe des Sciences.
<i>Bull. Acad. Sci. Cracov.</i>	Bulletin international de l'Académie des Sciences de Cracovie.
<i>Bull. Acad. Sci. Petrograd.</i>	Bulletin de l'Académie Impériale des Sciences de Petrograd.
<i>Bull. Acad. Sci. Roumaine</i>	Bulletin de la Section Scientifique de l'Académie Roumaine.
<i>Bull. Agric. Intell.</i>	Bulletin of the Bureau of Agricultural Intelligence and of Plant Diseases.
<i>Bull. Assoc. Chim. Sucr.</i>	Bulletin de l'Association des Chimistes de Sucre et de Distillerie.
<i>Bull. Bureau of Standards (U.S.A.).</i>	Bulletin of the Bureau of Standards (U.S.A.).
<i>Bull. Com. Géol. Finlande.</i>	Bulletin de la Commission Géologique de Finlande.
<i>Bull. Dept. Agric. Ceylon.</i>	Bulletin of the Department of Agriculture, Ceylon.
<i>Bull. Dept. Agric. Trinidad</i>	Bulletin of the Department of Agriculture, Trinidad.
<i>Bull. Forest Exp. Stat. Meguro.</i>	Bulletin of the Forest Experiment Station, Meguro, Tokyo.
<i>Bull. gén. Théráp.</i>	Bulletin général de Thérapeutique médicale, chirurgicale, obstétricale.
<i>Bull. Geol. Inst. Univ. Upsala.</i>	Bulletin of the Geological Institution of the University of Upsala.
<i>Bull. Geol. Soc. Amer.</i>	Bulletin of the Geological Society of America.
<i>Bull. Geol. Survey, U.S.A.</i>	Bulletin of the U.S. Geological Survey.
<i>Bull. Geol. Survey, West Australia.</i>	Bulletin of the Geological Survey, West Australia.
<i>Bull. Imp. Centr. Agric. Exp. Stat. Japan.</i>	Bulletin of the Imperial Central Agricultural Experimental Station of Japan.
<i>Bull. Imp. Inst.</i>	Imperial Institute Bulletin.
<i>Bull. Johns Hopkins Hospital.</i>	Bulletin of Johns Hopkins Hospital.
<i>Bull. Ranade Indus. Econ. Inst. Poona.</i>	Bulletin of the Ranade Industrial and Economic Institute, Poona.
<i>Bull. School Mines and Met., Univ. Missouri.</i>	Bulletin of the School of Mines and Metallurgy, University of Missouri.
<i>Bull. Sci. Pharmacol.</i>	Bulletin des Sciences Pharmacologiques.
<i>*Bull. Soc. chim.</i>	Bulletin de la Société chimique de France.
<i>*Bull. Soc. chim. Belg.</i>	Bulletin de la Société chimique de Belgique.
<i>Bull. Soc. chim. biol.</i>	Bulletin de la Société de chimie biologique.
<i>Bull. Soc. chim. Maurice.</i>	Bulletin de la Société chimique de Maurice.
<i>Bull. Soc. d'Encour.</i>	Bulletin de la Société d'Encouragement pour l'Industrie Nationale.
<i>Bull. Soc. franq. Min.</i>	Bulletin de la Société française de Minéralogie.
<i>Bull. Soc. Franc. Phot.</i>	Bulletin de la Société Française de Photographie.
<i>Bull. Soc. Ind. Mulhouse</i>	Bulletin de la Société Industrielle de Mulhouse.
<i>Bull. Soc. Ind. Nord.</i>	Bulletin de la Société Industrielle du Nord de la France.
<i>Bull. Soc. Ind. Rouen</i>	Bulletin de la Société Industrielle de Rouen.

ABBREVIATED TITLE.	JOURNAL.
<i>Bull. Soc. Oural. Sci. Nat.</i>	Bulletin de la Société Ouralienne des Amateurs des Sciences Naturelles à Catherineberg.
<i>Bull. Soc. Pharm. Bordeaux</i>	Bulletin des Travaux de la Société de Pharmacie de Bordeaux.
<i>Bull. Wellcome Trop. Res. Lab.</i>	Bulletin of the Wellcome Tropical Research Laboratory.
<i>Cairo Sci. J.</i>	Cairo Scientific Journal.
<i>Canada Dept. Mines Publ.</i>	Canada Department of Mines Publications.
<i>Canadian Med. Assoc. J.</i>	Canadian Medical Association Journal.
<i>Canadian Mining J.</i>	Canadian Mining Journal.
<i>Caoutchouc et Gutta-Percha</i>	Le Caoutchouc et le Gutta-Percha.
<i>Cement</i>	Cement.
<i>*Centr. Bakr. Par.</i>	Centralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten.
<i>Centr. Kunstdüngerind.</i>	Centralblatt für Kunstdüngerindustrie.
<i>Centr. Min.</i>	Centralblatt für Mineralogie, Geologie und Paläontologie.
<i>Centr. Zuckerind.</i>	Centralblatt für Zuckerindustrie.
<i>Céramique</i>	Céramique.
<i>Ch. of Comm. J.</i>	Chamber of Commerce Journal.
<i>Chemik. Polski</i>	Chemik Polski.
<i>Chem. App.</i>	Chemische Apparatur.
<i>Chem. Eng.</i>	Chemical Engineer.
<i>Chem. Erde</i>	Chemie der Erde.
<i>Chem. Ind.</i>	Chemische Industrie.
<i>*Chem. News</i>	Chemical News.
<i>Chem. Trade J.</i>	Chemical Trade Journal.
<i>Chem. Umschau Fett-Ind.</i>	Chemische Umschau über die Fett- und Harz-Industrie.
<i>*Chem. Weekblad</i>	Chemisch Weekblad.
<i>Chem. Zeit.</i>	Chemiker-Zeitung.
<i>Chem. Zeitsch.</i>	Chemische Zeitschrift.
<i>*Chem. Zentr.</i>	Chemisches Zentralblatt.
<i>Chem. and Drugg.</i>	Chemist and Druggist.
<i>Collegium</i>	Collegium.
<i>*Compt. rend.</i>	Comptes rendus hebdomadaires des Séances de l'Académie des Sciences.
<i>Compt. rend. l'Acad. d'Agric.</i>	Comptes rendus des Séances de l'Academie d'Agriculture de France.
<i>Compt. rend. Soc. Biol.</i>	Comptes rendus hebdomadaires de Séances de la Société de Biologie.
<i>Comptes rend. Trav. Lab. Carlsberg</i>	Comptes rendus des Travaux de Laboratoire de Carlsberg.
<i>Deut. Chem. S. Australia, Bull.</i>	Department of Chemistry, South Australia, Bulletins.
<i>Derm. Woch.</i>	Dermatologische Wochenschrift.
<i>Deut. Essigind.</i>	Deutsche Essigindustrie.
<i>Deut. Mechan. Zeit.</i>	Deutsche Mechaniker Zeitung.
<i>Deut. med. Woch.</i>	Deutsche medizinische Wochenschrift.
<i>Deut. Parfum. Zeit.</i>	Deutsche Parfumerie Zeitung.
<i>Dents. Zuckerind.</i>	Deutsche Zuckerindustrie.
<i>Econ. Geol.</i>	Economic Geology.
<i>Econ. Proc. Roy. Dublin Soc.</i>	Economic Proceedings of the Royal Dublin Society.
<i>Electrician</i>	Electrician.
<i>Elektrochem. Zeits.</i>	Elektrochemische Zeitschrift.
<i>Eng. and Min. J.</i>	Engineering and Mining Journal.
<i>Eng. News</i>	Engineering News.
<i>Eug. Rec.</i>	Engineering Record.
<i>Engrais</i>	L'Engrais.
<i>Exper. Stat. Rec.</i>	Experimental Station Record.
<i>Fachl. Mitt. Ost. Tabak.</i>	Fachliche Mitteilungen der Österreichische Tabakfrage.
<i>Farber-Zeitung</i>	Farber-Zeitung.

ABBREVIATED TITLE.	JOURNAL.
Farben-Zeit.	Farben-Zeitung.
Farm.	The Farm (Russia).
Fermentforsch.	Fermentforschung.
Ferrum.	Ferrum.
Feuerungstechnik	Feuerungstechnik.
Flora.	Flora.
Földtaná Közlöny	Földtaná Közlöny.
Fühlungs Landw. Zeit.	Fühlungs Landwirtschaftliche Zeitung.
Gas.	Het Gas.
Gas J.	Gas Journal.
Gas Rec.	Gas Record.
*Gazzetta	Gazzetta chimica italiana.
Geol. For. Förh.	Geologiska Föreningens i Stockholm Förhandlingar.
Geol. Mag.	Geological Magazine.
Gerber.	Gerber.
Gesundheitsheising.	Gesundheitsingenieur.
Gornosaw. Djelo.	Gornosawodskoje Djelo.
Gummi-Zeit.	Gummi-Zeitung.
Handl. Vist. Nat.	Handelingen van het Vijftende Natuur.
Hawaii Agric. Exp. Stat.	Hawaii Agricultural Experiment Station Bulletins.
Bull.	
Herz.	Heart.
Herl. Chim. Acta	Helvetica Chimica Acta.
Hess. Landw. Zeits.	Hessische Landwirtschaftliche Zeitschrift.
Hyg. Rundsch.	Hygienische Rundschau.
Indian Forest Bull.	Indian Forest Bulletin.
Indian J. Med. Res.	Indian Journal of Medical Research.
India-rubber J.	India-rubber Journal.
Ingenieur.	De Ingenieur.
Int. Mitt. Bodenk.	Internationale Mitteilungen für Bodenkunde.
Int. Sugar J.	International Sugar Journal.
Int. Z. Metallog.	Internationale Zeitschrift für Metallographie.
Int. Zeitsch. phys. chem.	Internationale Zeitschrift für physikalisch-chemische Biologie.
Biol.	
Iron Steel Inst. Carnegie Schol. Mem.	Iron and Steel Institute, Carnegie Scholarship Memoirs.
Jahrb. K. K. Geol. Reichsanst	Jahrbuch der K. K. geologischen Reichsanstalt.
Jahrb. Min.	Neues Jahrbuch für Mineralogie, Geologie und Palaeontologie.
Jahrb. Min. Beil.-Bd.	Neues Jahrbuch für Mineralogie, Geologie und Palaeontologie, Beilage-Band.
Jahrb. Radioaktiv. Elektronik.	Jahrbuch der Radioaktivität und Elektronik.
Jahrb. wiss. Bot.	Jahrbuch für wissenschaftliche Botanik.
Jahrsber. - Ges. Kultur.	Jahresbericht der schlesischen Gesellschaft für vaterländische Kultur.
Jernk. Ann.	Jern-kontorets Annaler.
J. d'Agric. prat.	Journal d'Agriculture Pratique.
*J. Agric. Res.	Journal of Agricultural Research.
*J. Agric. Sci.	Journal of Agricultural Science.
J. d'Agric. Trop.	Journal d'Agriculture Tropique.
J. Agric. Victoria	Journal of Agriculture, Victoria.
*J. Amer. Chem. Soc.	Journal of the American Chemical Society.
J. Amer. Leather Chem. Assoc.	Journal of the American Leather Chemists' Association.
J. Amer. Med. Assoc.	Journal of the American Medical Association.
J. Amer. Pharm. Assoc.	Journal of the American Pharmaceutical Association.
J. Assoc. Off. Agric. Chem.	Journal of the Association of Official Agricultural Chemists.
*J. Biol. Chem.	Journal of Biological Chemistry, New York.
J. Board Agric.	Journal of the Board of Agriculture.

viii JOURNALS FROM WHICH ABSTRACTS ARE MADE.

ABBREVIATED TITLE.

ABBREVIATED TITLE.	JOURNAL
J. Canad. Min. Inst. . . .	Journal of the Canadian Mining Institute.
J. Chem. Ind. Tokyo . . . .	See Kōgyō- Kwagaku-Zasshi.
J. Chem. Met. Soc. S. Africa . . . .	Journal of the Chemical, Metallurgical, and Mining Society of South Africa.
J. Chim. physique . . . .	Journal de Chimie physique.
J. Coll. Agric. Sapporo . . . .	Journal of the College of Agriculture, Sapporo, Japan.
J. Coll. Agric. Tohoku . . . .	Journal of the College of Agriculture, Tohoku Imperial University, Japan.
J. Coll. Agric. Tokyo . . . .	Journal of the College of Agriculture, Tokyo Imperial University, Japan.
J. Coll. Eng. Univ. Tokyo . . . .	Journal of the College of Engineering, University of Tokyo.
*J. Coll. Sci. Tokyo . . . .	Journal of the College of Science, Imperial University of Tokyo.
J. Exp. Med. . . .	Journal of Experimental Medicine.
J. Franklin Inst. . . .	Journal of the Franklin Institute.
J. Gasbeleucht. . . .	Journal für Gasbeleuchtung und Wasserversorgung.
J. Genetics . . . .	Journal of Genetics.
J. Geol. . . .	Journal of Geology.
J. Geol. Soc. Tokyo . . . .	Chishitsugaku Zasshi (Journal of the Geological Society of Tokyo).
J. Hygiene . . . .	Journal of Hygiene.
J. Imp. Gas Assoc. Tokyo . . . .	Journal of the Imperial Gas Association of Tokyo.
J. Ind. Eng. Chem. . . .	Journal of Industrial and Engineering Chemistry.
J. Inst. Brewing . . . .	Journal of the Institute of Brewing.
J. Inst. Petroleum Tech. . . .	Journal of the Institute of Petroleum Technologists.
J. Inst. Sanit. Eng. . . .	Journal of the Institute of Sanitary Engineers.
J. Landw. . . .	Journal für Landwirtschaft.
J. Manchester School Tech. . . .	Journal of the Manchester School of Technology.
J. Marine Biol. Assoc. U.K. . . .	Journal of the Marine Biological Association of the United Kingdom.
J. Med. Res. . . .	Journal of Medical Research.
J. Path. Bact. . . .	Journal of Pathology and Bacteriology.
J. Pharm. Chim. . . .	Journal de Pharmacie et de Chimie.
J. Pharm. Expt. Ther. . . .	Journal of Pharmacology and Experimental Therapeutics.
*J. Physical Chem. . . .	Journal of Physical Chemistry.
J. Physiol. . . .	Journal of Physiology.
J. Physiol. Path. gén. . . .	Journal de Physiologie et de Pathologie générale.
*J. pr. Chem. . . .	Journal für praktische Chemie.
J. Proc. Asiatic Soc. Bengal . . . .	Journal and Proceedings of the Asiatic Society of Bengal.
J. Roy. Agric. Soc. . . .	Journal of the Royal Agricultural Society.
J. Roy. Army Med. Corps . . . .	Journal of the Royal Army Medical Corps.
J. Roy. Hort. Soc. . . .	Journal of the Royal Horticultural Society.
J. Roy. Soc. New South Wales . . . .	Journal and Proceedings of the Royal Society of New South Wales.
J. Roy. Soc. West Australia . . . .	Journal of the Royal Society of West Australia.
*J. Russ. Phys. Chem. Soc. . . .	Journal of the Physical and Chemical Society of Russia.
J. Scot. Met. Soc. . . .	Journal of the Scottish Meteorological Society.
J. Soc. Arts . . . .	Journal of the Royal Society of Arts.
J. Soc. Dyers and Col. . . .	Journal of the Society of Dyers and Colourists.
J. Soc. Russé Métall. . . .	Journal de la Société Russé de Métallurgie.
J. S. African Assoc. Anal. Chem. . . .	Journal of the South African Association of Analytical Chemists.
J. Textile Inst. . . .	Journal of the Textile Institute.
J. Usines Gaz . . . .	Journal des Usines à Gaz.
J. Washington Acad. Sci. . . .	Journal of the Washington Academy of Science.
J. West Scotland Iron Steel Inst. . . .	Journal of the West of Scotland Iron and Steel Institute.

## JOURNALS FROM WHICH ABSTRACTS ARE MADE.

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## ABBREVIATED TITLE.

## JOURNAL.

<i>K. Svenska Vet.-Akad. Handl.</i>	Kongliga Svenska Vetenskaps Akademiens Hand- lingar.
Kali . . . . .	Kali.
Karbid u. Azet. . . . .	Karbid und Azetylen.
Kentucky Exp. Stat. Bull.	Kentucky Experimental Station, Bulletin.
Keram. Rundsch. . . . .	Keramisch Rundschau.
Kew Bull. . . . .	Kew Bulletin.
Kiserlet Kozl. . . . .	Kiserlet Kozlomények.
Klein u. Mittelbrauer. . . . .	Klein und Mittelbrauer.
Kongl. Landibr. Handl. Tidskr.	<i>See</i> Bull. Agric. Intell.
Kogyō-Kwagaku-Zasshi (Chem. Ind. Japan).	Kogyō-Kwagaku-Zasshi (Journal of Chemical Industry, Japan).
Kolloid Zeitsch.	Kolloid Zeitschrift.
Koll. Chem. Beihefte	Kolloid-chemische Beihefte.
Kosmos . . . . .	Kosmos (Lemberg).
Kühn-Archiv . . . . .	Kühn-Archiv.
Kunststoffe . . . . .	Kunststoffe.
Lancet . . . . .	The Lancet.
Landw. Jahrb.	Landwirtschaftliche Jahrbücher.
Landw. Versuchs.-Stat.	Die landwirtschaftlichen Versuchs-Stationen.
Leather Trades Rev.	Leather Trades Review.
Leather Trades Year Boo	Leather Trades Year Book.
Leather World . . . . .	Leather World.
Ledertech. Rundsch.	Ledertechnische Rundschau.
Leipzig. Monatsch. Textil-Ind.	Leipziger Monatschrift für Textil-Industrie.
Le Radium . . . . .	Le Radium.
Ind. Chimica . . . . .	L'Industria Chimica.
Ind. Chimique . . . . .	L'Industria Chimique.
Lilly Sci. Bull. . . . .	Lilly Scientific Bulletin.
Local Govt. Bd. Reports . . . . .	Local Government Board Reports.
Louisiana Bull. . . . .	Louisiana Bulletin.
Louisiana Planter . . . . .	Louisiana Planter.
Lunds Univ. Årskrift . . . . .	Lunds Universitets Årskrift.
Math. et Termes. Ért.	Mathematikai és Természettudományi Értesítő, Budapest.
Mat. Grasses . . . . .	Les Matières Grasses.
Medd. K. Vetenskapsakad. Nobel-Inst.	Meddelanden från Kongl.-Vetenskapsakademiens Nobel- Institut.
Medd. on Grönland . . . . .	Meddelser om Grönland.
Med. Chron. . . . .	Medical Chronicle.
Med. Klinik . . . . .	Medizinische Klinik.
Mem. Acad. Sci. Petrograd.	Mémoires de l'Académie Impériale des Sciences de Petrograd.
Mem. Accad. Lincei . . . . .	Memoria della Reale Accademia dei Lincei.
Mem. Accad. Sci. Torino . . . . .	Memoria della Reale Accademia delle Scienze di Torino.
Mem. Coll. Sci. Kyōto . . . . .	Memoirs of the College of Science, Kyōto Imperial University.
Mem. Coll. Sci. and Eng. Kyōto Imp. Univ.	Memoirs of the College of Science and Engineering, Kyōto Imperial University.
Mem. Dept. Agric. India . . . . .	Memoirs of the Department of Agriculture in India.
Mem. Manchester Phil. Soc.	Memoirs and Proceedings of the Manchester Literary and Philosophical Society.
Mém. Poudres et Salpêtres . . . . .	Mémoriale-des Poudres et Salpêtres.
Mem. Soc. Ing. Civ. . . . .	Mémoires de la Société des Ingénieurs Civils de France
Mem. Soc. Natur. Kiev . . . . .	Mémoires de la Société des Naturalistes de Kiev.
Mem. Soc. Toscana Sci. Nat. residente in Pisa.	Mémoire della Società Toscana di Scienze naturali residente in Pisa.
Metall u. Erz . . . . .	Metall und Erz.

ABBREVIATED TITLE.	JOURNAL.
Met. and Chem. Eng.	Metallurgical and Chemical Engineering.
Metallurgie	Metallurgie.
Metrop. Water Bd. Rep.	Metropolitan Water Board Reports.
Milch. Zentr.	Milchwirtschaftliches Zentralblatt.
<i>Min. Mag.</i>	Mineralogical Magazine and Journal of the Mineralogical Society.
Min. and Eng. Rev.	Mining and Engineering Review.
Ministry of Agric. Egypt.	Ministry of Agriculture of Egypt. Technical Science Service.
Tech. Sci. Service	Mittheilungen aus der Centralstelle für wissenschaftlich-technische Untersuchungen.
Mitt. Centralst. wiss.-techn. Unters.	Mittheilungen der deutschen Landwirtschafts-Gesellschaft.
Mitt. deut. Landw.-Ges.	Mittheilungen des deutschen milchwirtschaftlichen Vereins.
Mitt. deut. milchwirt. Ver.	Mittheilungen der geologischen Landesanstalt von Elsaß-Lothringen.
Mitt. geol. Landesanst.	Mittheilungen aus dem königlichen Materialprüfungsamt zu Gross-Lichterfelde West.
Mitt. k. Materialprüf.	Mittheilungen des k. k. Technischen Versuchsamtes.
Mitt. k. k. Techn. Ver- suchsamtes	Mittheilungen der medizinischen Gesellschaft zu Tokyo.
Mitt. med. Ges. Tokyo	Mittheilungen der Naturforschenden Gesellschaft zu Halle.
Molk.-Zeit.	Molkerei-Zeitung.
*Monatsh.	Monatshefte für Chemie und verwandte Teile anderer Wissenschaften.
Monatsh. Math. Physik	Monatshefte für Mathematik und Physik.
*Mon. Sci.	Moniteur Scientifique.
Montan. Rundsch.	Montanische Rundschau.
Month. Not. Roy. Astr. Soc.	Monthly Notices of the Royal Astronomical Society, London.
Münch. med. Woch.	Münchener medizinische Wochenschrift.
Mycol. Zentr.	Mycologisches Zentralblatt.
Nachr. Ges. Wiss. Göttingen.	Nachrichten von der Königlichen Gesellschaft der Wissenschaften zu Göttingen.
Nature	Nature.
Naturwiss.	Die Naturwissenschaften.
Naturwiss. Rdsch.	Naturwissenschaftliche Rundschau.
Nephthanoje Djelo	Nephthanoje Djelo.
New York Agr. Expt. Sta. Bull.	New York Agricultural Experiment Station Bulletins.
New Zealand Dominion Laby. Rept.	New Zealand Dominion Laboratory Reports.
Nova Acta Soc. Sci.	Nova Acta Regiae Societatis Scientiarum Upsaliensis.
Nuovo Cim.	Il Nuovo Cimento.
Öfvers. Finska Vet.-Soc.	Öfversigt af Finska Vetenskaps-Societetens Forhandlingar, Helsingfors.
Oelmotor	Der Oelmotor.
Oesterr. Chem.-Zeit.	Oesterreichische Chemiker-Zeitung.
Oesterr. Z. Berg- u. Hüttenw.	Oesterreichische Zeitschrift für Berg- und Hüttenwesen.
Oil and Colour Trades J.	Oil and Colour Trades Journal.
Oil, Paint, and Drug Rep.	Oil, Paint, and Drug Reporter.
Oversigt Danske Vid. Selsk.	Oversigt over det Kongelige Danske Videnskabernes Selskab Forhandlinger.
Pahaspapa Quart.	Pahaspapa Quarterly.
Paper	Paper.
Paper Maker	Paper Maker.
Paper Making	Paper Making.

## JOURNALS FROM WHICH ABSTRACTS ARE MADE.

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ABBREVIATED TITLE.	JOURNAL.
Papierfabr.	Papier-Fabrikant.
Papier-Zeit.	Papier-Zeitung.
Perf. and Essent. Oil Rec.	Perfumery and Essential Oil Record.
Per. spis. Sofia.	Periodicosko spisanje Sofia.
Petroleum.	Petroleum.
Pfluger's Archiv.	Archiv für die gesammte Physiologie des Menschen und der Thiere.
Pharm. J.	Pharmaceutical Journal.
Pharm. Post.	Pharmazentische Post.
Pharm. Weekblad.	Pharmaceutisch Weekblad.
Pharm. Zeit.	Pharmazentische Zeitung.
Pharm. Zentr.-h.	Pharmazentische Zentralhalle.
Pharmazevt. J.	Pharmazevtizski Jurnal.
Phil. Mag.	Philosophical Magazine (The London, Edinburgh and Dublin).
Phil. Trans.	Philosophical Transactions of the Royal Society of London.
Philippine J. Sci.	Philippine Journal of Science.
Phot. Ind.	Photographische Industrie.
Phot. J.	Photographic Journal.
Phot. Korv.	Photographische Korrespondenz.
Phot. Rundsch.	Photographische Rundschau.
Physical Rev.	Physical Review.
Physikal. Zeitsch.	Physikalische Zeitschrift.
Porto Rico Exper. Stat. Bull.	Porto Rico Experiment Station Bulletin.
Proc. Amer. Phil. Soc.	Proceedings of the American Philosophical Society.
Proc. Amer. Physiol. Soc.	Proceedings of the American Physiological Society.
*Proc. Amer. Soc. Biol. Chem.	Proceedings of the American Society of Biological Chemists.
Proc. Amer. Soc. Civ. Eng.	Proceedings of the American Society of Civil Engi- ners.
Proc. Amer. Soc. Testing Materials	Proceedings of American Society for Testing Materials.
Proc. Amer. Wood Preservers' Assoc.	Proceedings of American Wood Preservers Association.
Proc. Austral. Inst. Min. Eng.	Proceedings of the Australasian Institute of Mining Engineers.
Proc. Brit. Foundrymen's Assoc.	Proceedings of British Foundrymen's Association.
Proc. Camb. Phil. Soc.	Proceedings of the Cambridge Philosophical Society.
Proc. Durham Phil. Soc.	Proceedings of the Durham Philosophical Society.
Proc. Eng. Soc. W. Pa.	Proceedings of the Engineers' Society of Western Pennsylvania.
Proc. Inst. Civ. Eng.	Proceedings of the Institution of Civil Engineers.
Proc. Inst. Mech. Eng.	Proceedings of the Institution of Mechanical Engi- neers.
Proc. Inst. Min. and Met.	Proceedings of the Institution of Mining and Metal- lurgy.
*Proc. K. Akad. Wetensch. Amsterdam.	Koninklijke Akademie van Wetenschappen te Amster- dam. Proceedings (English version).
Proc. Nat. Acad. Sci.	Proceedings of the National Academy of Sciences.
Proc. Nova Scotia Inst. Sci.	Proceedings of the Nova Scotia Institute of Science.
Proc. Phil. Soc. Glasgow.	Proceedings of the Glasgow Philosophical Society.
Proc. Physical Soc. London.	Proceedings of the Physical Society of London.
Proc. Physiol. Soc.	Proceedings of the Physiological Society.
Proc. Roy. Inst.	Proceedings of the Royal Institution of Great Britain.
Proc. Roy. Irish Acad.	Proceedings of the Royal Irish Academy.
*Proc. Roy. Soc.	Proceedings of the Royal Society.
Proc. Roy. Soc. Edin.	Proceedings of the Royal Society of Edinburgh.
Proc. Roy. Soc. Med.	Proceedings of the Royal Society of Medicine.
Proc. Roy. Soc. Queensland.	Proceedings of the Royal Society of Queensland.

ABBREVIATED TITLE.	JOURNAL.
Proc. Roy. Soc. Tasmania.	Proceedings of the Royal Society of Tasmania.
Proc. Soc. Chem. Ind. Victoria.	Proceedings of the Society of Chemical Industry, Victoria.
Proc. Soc. Expt. Biol. Med.	Proceedings of the Society for Experimental Biology and Medicine.
Proc. U.S. Nat. Mus.	Proceedings of the United States National Museum.
Proc. verb. Soc. Toscana Sci. Nat.	Processi verbali Società Toscana di Scienze Naturali.
Quart. J. Expt. Physiol.	Quarterly Journal of Experimental Physiology.
Quart. J. Geol. Soc.	Quarterly Journal of the Geological Society.
Quart. J. Med.	Quarterly Journal of Medicine.
Queensland Agric. J.	Queensland Agricultural Journal.
Radium in Biol. Heilkunde	Radium in Biologie und Heilkunde.
Rec. Australian Mus.	Records of the Australian Museum.
Rec. trav. bot. Néerland.	Recueil des travaux botaniques Néerlandaises.
*Rec. trav. chim.	Recueil des travaux chimiques des Pays-Bas et de la Belgique.
Rend. Accad. Sci. Fis. Mat. Napoli.	Rendiconto dell' Accademia delle Scienze Fisiche e Matematiche, Napoli.
Rend. Ist. Lomb. Sci. Lett.	Rendiconti dell' Istituto Lombardo di Scienze e Lettere.
Rend. Soc. Chim. Ital.	Rendiconto della Società Chimica Italiana.
Rep. Aust. Assoc. Sci.	Report of the Australian Association for the Advancement of Science.
Rep. Brit. Assoc.	Report of the British Association for the Advancement of Science.
Rep. Pharm.	Repertoire de Pharmacie.
Rev. Viticolt.	Revista Viticolt.
Rev. gén. Bot.	Revue générale de Botanique.
Rev. gén. Chim. pure appl.	Revue générale de Chimie pure et appliquée.
Rev. Gén. Mat. Col.	Revue Générale des Matières Colorantes.
Rev. Mét.	Revue de Métallurgie.
Rev. Real Acad. Ciencias exact. Madrid.	Revista de la Real Academia de Ciencias exactas, Fisicas y Naturales de Madrid.
Riv. Min. Crist. Ital.	Rivista di Mineralogia e Cristallografia Italiana.
Russian Mining J.	Russian Mining Journal.
Sbornik Khim. Pri.	Sbornik Klubu Prirodovedeckeho (Prague).
Schiummel's Rep.	Schimmel's Reports.
Schweiz. Apoth. Zeit.	Schweizerische Apotheker Zeitung.
Schweiz. Woch. Chem. Pharm.	Schweizerische Wochenschrift für Chemie und Pharmacie.
Science.	Science.
Scient. Amer.	Scientific American.
*Sci. Ind. Rep. Roure-Bertrand Fils.	Scientific and Industrial Reports of Roure-Bertrand Fils.
Sci. Proc. Roy. Dubl. Soc.	Scientific Proceedings of the Royal Dublin Society.
Sci. Rep. Tohoku Imp. Univ.	Science Reports, Tohoku Imperial University.
Sci. Trans. Roy. Dubl. Soc.	Scientific Transactions of the Royal Dublin Society.
Seifenfär.	Der Seifenfabrikant.
Seifensied. Zeit.	Seifensieder Zeitung.
Selsk. Khoz. Les. Petrograd	Selskoe Khoziaistvo i Lesovodstvo Petrograd.
Shoe and Leather Rep.	Shoe and Leather Reporter.
Silikat-Zeits.	Silikat-Zeitschrift.
Sitzungsber. Ges. Naturwiss. Marburg.	Sitzungsberichte der Gesellschaft zur Beförderung der gesammten Naturwissenschaften in Marburg.
Sitzungsber. Heidelberg. Akad. Wiss.	Sitzungsberichte der Heidelberg Akademie der Wissenschaften.
Sitzungsber. K. Akad. Wiss. Berlin.	Sitzungsberichte der Königlich Preussischen Akademie der Wissenschaften zu Berlin.
Sitzungsber. K. Akad. München.	Sitzungsberichte der Königlich bayerischen Akademie der Wissenschaften München.

## ABBREVIATED TITLE.

## JOURNAL.

<i>Sitzungsber. K. Akad. Wiss. Wien.</i>	Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften, Wien.
<i>Sitzungsber. Med. Naturwiss. Ges. Münster.</i>	Sitzungsberichte der Medizinisch-Naturwissenschaftlichen Gesellschaft zu Münster-in-Westfalen.
<i>Sitzungsber. Naturforsch. Ges. Petrograd.</i>	Sitzungsberichte der Naturforschenden Gesellschaft zu Petrograd.
<i>Sitzungsber. Naturforsch. Ges. Rostock.</i>	Sitzungsberichte der Naturforschenden Gesellschaft zu Rostock.
<i>Sitzungsber. phys. med. Ges. Erlangen.</i>	Sitzungsberichte der physikalisch-medizinischen Gesellschaft zu Erlangen.
<i>Skand. Arch. Physiol.</i>	Skandinavisches Archiv für Physiologie.
<i>Smithsonian Miscell. Coll.</i>	Smithsonian Miscellaneous Collections.
<i>Soil Sci.</i>	Soil Science.
<i>South African J. Sci.</i>	South African Journal of Science.
<i>Spezialmonats. Brau- Malz.</i>	Spezialmonatshefte für Brau- und Malzerei betriebskontrolle.
<i>Sprechsaal.</i>	Sprechsaal.
<i>Stahl u. Eisen</i>	Stahl und Eisen.
<i>Saz. sper. agr. ital.</i>	Stazioni sperimentali agrarie italiane.
<i>Strahlenther.</i>	Strahlentherapie.
<i>Sucr. Indig.</i>	Sucrerie Indigène.
<i>Süddeut. Apoth. Zeit.</i>	Süddeutsche Apotheker Zeitung.
<i>Suikerind.</i>	De Suikerindustrie.
<i>Suom. Tied. Tövin.</i>	Suomalaisen Tiedeakatemian Toimituska.
<i>Svensk Kem. Tidskr.</i>	Svenska Kemisk Tidskrift.
<i>T.</i>	Transactions of the Chemical Society.
<i>Teknikern</i>	Teknikern.
<i>Tekn. Tidsk.</i>	Teknisk Tidskrift.
<i>Textile Col.</i>	Textile Colourist.
<i>Ther. Gegenw.</i>	Die Therapie der Gegenwart.
<i>Ther. Monatsh.</i>	Therapeutische Monatshäfte.
<i>Tidsk. Kemi, Farm., Ter.</i>	Tidskrift Kemi, Farm. og Terape.
<i>Tidsk. Teknikern.</i>	Tidskriften Teknikern.
<i>Times Eng. Supplt.</i>	Times Engineering Supplement.
<i>Tonind.-Zeit.</i>	Tonindustrie-Zeitung.
<i>Trans. Amer. Ceram. Soc.</i>	Transactions of the American Ceramic Society.
<i>Trans. Amer. Electrochem. Soc.</i>	Transactions of the American Electrochemical Society.
<i>Trans. Amer. Foundrymen's Assoc.</i>	Transactions of the American Foundrymen's Association.
<i>Trans. Amer. Inst. Chem. Eng.</i>	Transactions of the American Institute of Chemical Engineers.
<i>Trans. Amer. Inst. Metals.</i>	Transactions of the American Institution of Metals.
<i>Trans. Amer. Inst. Min. Eng.</i>	Transactions of the American Institute of Mining Engineers.
<i>Trans. Engl. Ceram. Soc.</i>	Transactions of the English Ceramic Society.
<i>Trans. Faraday Soc.</i>	Transactions of the Faraday Society.
<i>Trans. Inst. Metals.</i>	Transactions of the Institute of Metals.
<i>Trans. Iron and Steel Inst. Met.</i>	Transactions of the Iron and Steel Institute.
<i>Trans. N. Eng. Inst. Min. and Met.</i>	Transactions of the North of England Institute of Mining and Metallurgy.
<i>Trans. New Zealand Inst.</i>	Transactions of the New Zealand Institute.
<i>Trans. Nova Scotia Inst. Sci.</i>	Transactions of the Nova Scotia Institute of Science.
<i>Trans. Path. Soc.</i>	Transactions of the Pathological Society.
<i>Trans. Roy. Irish Acad.</i>	Transactions of the Royal Irish Academy.
<i>Trans. Roy. Soc. Canada.</i>	Transactions of the Royal Society of Canada.
<i>Trans. Roy. Soc. Edin.</i>	Transactions of the Royal Society of Edinburgh.
<i>Trans. Surveyors' Inst.</i>	Transactions of the Surveyors Institute.
<i>Petr. Mus. Geol. Acad. Sci. Petrograd.</i>	Travaux de Musée Géologique près l'Academie Impériale des Sciences de Petrograd.

ABBREVIATED TITLE.	JOURNAL.
<i>Trav. Soc. Natur. Petrograd.</i>	Travaux de la Société Impériale des Naturalistes de Petrograd.
Tropenpflanzer . . .	Tropenpflanzer.
<i>Tsch. Min. Mitt.</i>	Tscherimak's Mineralogische Mitteilungen.
U.S. Bureau of Mines, Bull. and Tech. Papers.	United States Bureau of Mines, Bulletins and Technical Papers.
U.S. Bureau Plant Ind.	United States Bureau of Plant Industry.
U.S. Comm. Rept. . .	United States Commerce Reports, Daily Consular and Trade Reports.
U.S. Dept. Agric. Bull.	United States Department of Agriculture Bulletins.
<i>U.S. Hyg. Labor. Bull.</i>	United States Hygienic Laboratory Bulletins.
Univ. Illinois Bull.	University of Illinois Bulletins.
Utah Agric. Coll. Exper. Stat. Bull.	Utah Agricultural College Experiment Station Bulletins.
Ver. deut. Textilver.	Verein deutscher Textilveredlungsindustrie.
<i>Verh. Geol. Reichsanst. Wien.</i>	Verhandlungen der k. k. geologischen Reichsanstalt in Wien.
<i>Verh. Ges. deut. Naturforsch. Aertza.</i>	Verhandlung der Gesellschaft deutscher Naturforscher und Aertze.
<i>Verh. Naturhist. med. Ver. Heidelberg.</i>	Verhandlungen des naturhistorisch-medizinischen Vereins zu Heidelberg.
<i>Verh. Naturhist. Rheinl.</i>	Verhandlungen des naturhistorischen Vereins der preussischen Rheinlande und Westfalen.
<i>Verh. Physiol. Ges. Berlin</i>	Verhandlungen der Physiologischen Gesellschaft zu Berlin.
<i>Verh. Schweiz. Nat. Ges.</i>	Verhandlungen der Schweizerischen Naturforschenden Gesellschaft, Basel.
Verslag Landb. . .	Verslag Landbouwkund Onderzoek Ryklandbouwproefstat.
Vet. Rec.	Veterinary Record.
<i>Vict. Mem. Mus. Geol. Survey, Canada.</i>	Victoria Memorial Museum Geological Survey of Canada, Bulletin
<i>Videnskab. Skrifter</i>	Skrifter udgivne af Videnskabsselskabet i Kristiania.
Wasser u. Gas . .	Wasser und Gas.
West Ind. Agric. News	West Indian Agricultural News.
West Ind. Bull. . .	West Indian Bulletin.
Westnik Sacch. Prom.	Westnik Saccharnoi Promyschljenosti.
<i>Wiener Klin. Woch.</i>	Wiener Klinische Wochenschrift.
<i>Wiss. Abhandl. Physikal. Tech. Reichsanst.</i>	Wissenschaftliche Abhandlungen der Physikalisch-Technischen Reichsanstalt.
Wochbl. Papierfabr. .	Wochenblatt für Papierfabrikation.
Woch. f. Brau. . .	Wochenschrift für Brauerei.
Yakugakuzashi . .	Yakugakuzashi.
<i>Zeitsch. allg. Physiol.</i>	Zeitschrift für allgemeine Physiologie.
* <i>Zeitsch. anal. Chem.</i>	Zeitschrift für analytische Chemie.
Z. angew. Chem. . .	Zeitschrift für angewandte Chemie.
* <i>Zeitsch. anorg. Chem.</i>	Zeitschrift für anorganische und allgemeine Chemie.
<i>Zeitsch. Biol.</i>	Zeitschrift für Biologie.
<i>Zeitsch. deut. Geol. G.</i>	Zeitschrift der deutschen Geologischen Gesellschaft.
* <i>Zeitsch. Elektrochem.</i>	Zeitschrift für Elektrochemie.
<i>Zeitsch. exp. Path. Ther.</i>	Zeitschrift für experimentelle Pathologie und Therapie.
Z. Farben-Ind. . .	Zeitschrift für Farben-Industrie.
Z. Forst- u. Jagdwesen	Zeitschrift für Forst- und Jagdwesen.
Z. Gärungsphysiol. .	Zeitschrift für Gärungsphysiologie.
Z. ges. Brauw. . .	Zeitschrift für das gesamte Brauwesen.
<i>Zeitsch. ges. exp. Med.</i>	Zeitschrift für die gesamte experimentelle Medizin.
Z. ges. Getreidew. . .	Zeitschrift für das Getreidewesen.
Z. ges. Schiess- u. Sprengstoffw.	Zeitschrift für das gesamte Schiess- und Sprengstoffwesen.
<i>Zeitsch. Hyg.</i> . . .	Zeitschrift für Hygiene und Infektionskrankheiten.

ABBREVIATED TITLE.	JOURNAL.
<i>Zeitsch. Immunit.</i> . . .	Zeitschrift für Immunitätsforschung und experimentelle Therapie.
<i>Zeitsch. Instrument.</i> . . .	Zeitschrift für Instrumentenkunde.
<i>Z. Kali</i> . . .	Zeitschrift für Kali.
<i>Zeitsch. Kryst. Min.</i> . . .	Zeitschrift für Krystallographie und Mineralogie.
<i>Z. landw. Versuchsw.</i> . . .	Zeitschrift für das landwirtschaftlichen Versuchswesen in Oesterreich.
<i>Z. öffentl. Chem.</i> . . .	Zeitschrift für öffentliche Chemie.
* <i>Zeitsch. physikal. Chem.</i> . . .	Zeitschrift für physikalische Chemie, Stöchiometrie und Verwandtschaftslehre.
<i>Zeitsch. physikal. Chem.</i> Unterr.	Zeitschrift für den physikalischen und Chemischen Unterricht.
<i>Zeitsch. physiol. Chem.</i> . . .	Hoppe-Seyler's Zeitschrift für physiologische Chemie.
<i>Zeitsch. prakt. Geol.</i> . . .	Zeitschrift für praktische Geologie.
<i>Z. Spiritusind.</i> . . .	Zeitschrift für Spiritusindustrie.
<i>Z. Unters. Nahr. Genussin.</i> . . .	Zeitschrift für Untersuchung der Nahrungs- und Genussmittel.
<i>Z. Ver. deut. Zuckerind.</i> . . .	Zeitschrift des Vereins der deutschen Zucker-Industrie.
<i>Zeitsch. wiss. Mikrosk.</i> . . .	Zeitschrift für wissenschaftliche Mikroskopie und mikroskopische Technik.
* <i>Zeitsch. wiss. Photochem.</i> . . .	Zeitschrift für wissenschaftliche Photographie, Photophysik und Photochemie.
<i>Z. Zuckerind. Böh.</i> . . .	Zeitschrift für Zuckerindustrie in Böhmen.



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